

ABSTRACT

Improved valve and methods for analytical techniques and systems. The valve includes a main housing, together with a rotor and stator. The stator has openings therethrough which allow for fluid communication between tubing when connected to the valve, and one surface of the rotor. Ferrules can be used with a clamping assembly to tightly connect the tubing to the valve in a way which separates the clamp assemblies (for ease of connection and disassembly), yet still provides close proximity between the fluid connections. In one embodiment, a series of two or more discrete elements, which can be selectively moved relative to one another, are located within the valve in a “stacked” configuration. Each of the discrete elements includes at least one feature useful for performing chemical analysis, such as sample loops, columns, detectors, mixers and the like, all of which are useful in chromatography.